

ABSTRACT

An odor removal system to neutralize odors and VOC emissions ~~released into the environment by~~ in commercial and/or industrial air streams utilizes Non-Thermal Plasma (NTP) to create a range of Reactive Oxygen Species (ROS) to cause the oxidation and/or reduction of odor causing molecules and VOC's. The ROS is generated by drawing atmospheric and/or odorous air through a Dielectric Barrier Discharge Plasma Generation Cell (DBDPGC). The gas is activated by passing it through the non-thermal plasma field in the DBDPGC, producing the ROS that are then immediately mixed into the odorous gas ~~stream~~ to be treated, ~~or if it is~~ . If the odorous gas ~~that~~ is passing through the NTP field, it is inherently mixed. When large volumes of gas, and/or extremely high odor ~~load~~ loads in ~~combination~~ with large gas volumes must be treated, multiple units can be combined in parallel ~~to treat the gas~~. The DBDPGC has hermetically sealed hot electrodes and may be used in other applications.